

Application S.N. 10/595,558
November 16, 2007
Reply to the Office Action dated June 18, 2007
Page 2 of 7

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claims 1 and 2 (canceled).

Claim 3 (previously presented): A multilayer positive temperature coefficient thermistor comprising:

a multilayer element main body including a plurality of stacked ceramic layers including a barium titanate semiconductor ceramic exhibiting a positive temperature characteristic of resistance and a plurality of internal electrodes including nickel, the internal electrodes being disposed at the interfaces of the ceramic layers; wherein the following conditions are satisfied:

$$5 \leq X \leq 18; \text{ and}$$

$$4 \leq X \cdot Y \leq 10;$$

wherein X is a thickness expressed in μm of each ceramic layer between the internal electrodes and Y is a donor content expressed in percentage in the barium titanate semiconductor ceramic expressed in terms of (number of donor atoms/number of Ti atoms) $\times 100$.

Claim 4 (previously presented): A method for designing a multilayer positive temperature coefficient thermistor comprising a multilayer element main body including a plurality of stacked ceramic layers including a barium titanate semiconductor ceramic exhibiting a positive temperature characteristic of resistance and a plurality of internal electrodes including nickel, the internal electrodes being disposed at the interfaces of the ceramic layers, the method comprising the steps of:

determining a thickness X expressed in μm of each ceramic layer so as to satisfy the condition $5 \leq X \leq 18$; and

Application S.N. 10/595,558

November 16, 2007

Reply to the Office Action dated June 18, 2007

Page 3 of 7

determining the donor content Y expressed in percentage in the barium titanate semiconductor ceramic according to the thickness X so as to satisfy the condition $4 \leq X \cdot Y \leq 10$, wherein the donor content Y is expressed in terms of $(\text{number of donor atoms}/\text{number of Ti atoms}) \times 100$.